DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: STONE POND	Lake Area (ha): 2	6.26
Town: MARLBOROUGH	Maximum depth (m): 14.	6
County: Cheshire	Mean depth (m): 6.	0
River Basin: Connecticut	Volume (m^3) : 15705	00
Latitude: 42°53'52" N	Relative depth: 2.	5
Longitude: 72°09'20" W	Shore configuration: 1.	
Elevation (ft): 1296	Areal water load (m/yr): 5.	
Shore length (m): 2400	Flushing rate (yr^{-1}) : 1.	
Watershed area (ha): 284.9	P retention coeff.: 0.	
% watershed ponded: 0.0	Lake type: natural w/d	am

BIOLOGICAL:	27 January 1994	7 July 1993
DOM. PHYTOPLANKTON (% TOTAL) #1	TABELLARIA 45%	TABELLARIA 60%
#2	ASTERIONELLA 40%	RHIZOSOLENIA 15%
#3	DINOBRYON 15%	PENNATE DIATOM SPP 10%
PHYTOPLANKTON ABUNDANCE (cells/mL)		780
CHLOROPHYLL-A (µg/L)		1.85
DOM. ZOOPLANKTON (% TOTAL) #1	BOSMINA 26%	KERATELLA 62%
#2	CALANOID COPEPOD 23%	
#3	KERATELLA 20%	
ROTIFERS/LITER	20	24
MICROCRUSTACEA/LITER	44	15
ZOOPLANKTON ABUNDANCE (#/L)	65	39
VASCULAR PLANT ABUNDANCE		Scattered
SECCHI DISK TRANSPARENCY (m)		6.2
BOTTOM DISSOLVED OXYGEN (mg/L)	17.4	0.6
BACTERIA (E. coli, #/100 ml) #1		
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 7.2 Hypolimnion volume (m³): 72500 Anoxic volume (m³): 9000

CHEMICAL:			STONE PONI			
	27 January 1994		7 July 1993			
DEPTH (m)	4.0	9.0	2.5	7.0	11.5	
pH (units)	6.2	5.9	6.6	6.5	6.3	
A.N.C. (Alkalinity)	2.1	2.0	1.7	1.9	2.5	
NITRATE NITROGEN	< 0.05	0.07	< 0.02		< 0.02	
TOTAL KJELDAHL NITROGEN	0.24	0.16	< 0.10	0.15	0.13	
TOTAL PHOSPHORUS	0.006	0.006	0.003	0.006	0.010	
CONDUCTIVITY (µmhos/cm)	26.5	27.1	24.8	24.1	25.0	
APPARENT COLOR (cpu)	< 5	< 5	< 5	7	11	
MAGNESIUM			0.58			
CALCIUM			1.0			
SODIUM			1.7			
POTASSIUM			0.60			
CHLORIDE	2	2	. < 3		< 3	
SULFATE	5	5	5		4	
TN : TP	40	38			13	
CALCITE SATURATION INDEX			4.5			

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1993

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
3	1	1	0	5	Oligo.

COMMENTS:

- 1. This pond was previously surveyed and classified in 1979. There was no change in trophic classification and little change in water quality. The major change in water quality was the presence of a dissolved oxygen depletion zone in the bottom waters in 1993. The lack of finding such a zone in 1979 was probably because a much shallower depth was sampled in 1979.
- 2. This pond has been sampled twice a year, during spring and fall overturn, since 1983 as part of DES' acid rain monitoring program. The pH has ranged around 6.0 to 6.2 during this time, with ANC's between 1.0 and 2.0. Higher pH values during the summer suggest photosynthetically enhanced values.
- 3. A good boat launch site was present adjacent to the Town Beach at the site of the old outlet at the southwest end of the pond. The pond now drains through the northwest end.
- 4. Rhizosolenia (35%) and Elakatothrix (20%) were the dominant genera of wholewater phytoplankton.

Stone Pond Marlborough 30 20 20 30 N launch 10 foot depth contours 0.2 0

 Km

FIELD DATA SHEET

LAKE: STONE POND

TOWN: MARLBOROUGH

DATE: 07/07/93

WEATHER: 90'S & HUMID

DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.1	25.0	8.2	99 %
1.0	24.5	8.2	97 %
2.0	24.0	8.1	96 %
3.0	23.0	8.4	97 %
4.0	22.5	8.7	98 %
5.0	21.0	10.2	114 %
6.0	19.5	11.2	120 %
7.0	16.0	11.4	115 %
8.0	13.0	13.2	125 %
9.0	10.0	13.6	119 %
10.0	9.0	13.2	114 %
10.5	8.0	12.0	101 %
11.0	9.0	11.4	98 %
11.5	8.0	7.0	59 %
12.0	8.0	0.9	7 %
13.0	8.0	0.5	4 %
13.5	7.0	0.6	5 %
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SECCHI DISK (m): 6.2 COMMENTS:

BOTTOM DEPTH (m): 14.0

TIME: 1345

*Dissolved oxygen values are in mg/L

Stone Pond Marlborough Ν 0.2 0 Km

AQUATIC PLANT SURVEY

LAKE: STONE POND	TOWN: MARLBOROUGH	DATE: 07/07/93
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~,	PLANT	ADUNDANCE		
Key	GENERIC	COMMON	ABUNDANCE	
В	Brasenia schreberi	Water shield	Scattered	
D	Decodon verticillatus	Swamp loosestrife	Sparse	
R	Potamogeton robbinsii	Robbins pondweed	Sparse	
N	Nymphaea	White water lily	Scattered	
υ	Utricularia	Bladderwort	Sparse	
W	Potamogeton diversifolius	Pondweed	Sparse	
Х		Sterile thread-like leaf	Sparse	
d	Dulichium arundinaceum	Three-way sedge	Sparse	
E	Eriocaulon septangulare	Pipewort	Scattered	
G	Gramineae	Grass family	Sparse	
g	Myrica gale	Sweet gale	Sparse	
L	Lobelia dortmanna	Water lobelia	Sparse	
M	Myriophyllum humile	Water milfoil	Sparse	
I	Iris	Iris	Sparse	
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OVERALL ABUNDANCE: Scattered

GENERAL OBSERVATIONS:

- 1. Filamentous algae were interspersed among the rooted plants.
- 2. A beaver lodge was observed along with numerous tadpoles and frogs.